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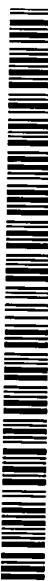
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(54) Title: HUMAN EMBRYONIC STEM CELL CULTURES, AND COMPOSITIONS AND METHODS FOR GROWING SAME

(57) Abstract: Human pluripotential embryonic stem cell cultures are provided, as are human feeder cells useful for growing the human embryonic stem cells, conditioned medium obtained from cultures of the human feeder cells, and factors derived from the conditioned medium. Also provided are methods of growing human embryonic stem cells in the presence of the human feeder cells, the conditioned medium, the factors derived from the conditioned medium, or a combination thereof. In addition to the human embryonic stem cell cultures grown according to such methods, isolated human embryonic stem cells obtained from such human embryonic stem cell cultures are provided, as are methods of using such isolated cells.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/35734

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : C12N 5/08, 5/02; A01K 63/00; A61K 48/00  
US CL : 435/366, 373, 374, 377, 383, 391; 424/93.2

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
U.S. : 435/366, 373, 374, 377, 383, 391; 424/93.2

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
EAST, CAPLUS, BIOSIS, EMBASE, MEDLINE

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 99/20741 A1 (GERON CORPORATION) 29 April 1999, see especially pages 19-29.	10-17, 19-24, 26-34, 36-45 and 57-64
X		18, 25, 35 and 56
X	THOMSON, J. A. et al. Embryonic Stem Cell Lines Derived from Human Blastocysts. Science. 06 November 1998, Vol. 282, pp. 1145-1147, see pages 1145-1147. see entire document.	1-9, 18, 25, 35 and 56
Y	XU, C. et al. Feeder-Free Growth of Undifferentiated Human Embryonic Stem Cells. Nature Biotechnology. October 2001, Vol. 19, pp. 971-974, see especially pages 971 and 972.	10-17, 19-24, 26-34, 36-55 and 57-64
Y	WAELTI, E. R. et al. Co-Culture of Human Keratinocytes on Post-Mitotic Human Dermal Fibroblast Feeder Cells: Production of Large Amounts of Interleukin 6. Journal Investigative Dermatology. 1992, Vol. 98, pp. 805-808, see especially pages 806-808.	10-17, 19-24, 26-34, 36-49, 51-55 and 57-64
		18, 25, 35 and 56
		10-34, 36-49 and 51-55
		35 and 50



Further documents are listed in the continuation of Box C.



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"E" earlier application or patent published on or after the international filing date	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed		

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## INTERNATIONAL SEARCH REPORT

## C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	ITANO, M. et al. Establishment and Characterization of a Novel Human Immature Megakaryoblastic Leukemia Cell Line, M-MOK, Dependent on Fibroblasts for its Viability. Experimental Hematology. 1995, Vol. 23, pp. 1301-1309, see especially 1303-1306.	10-34 and 3664 -----
X		35
Y	CARPENTER, M. K. et al. In Vitro Expansion of a Multipotent Population of Human Neural Progenitor Cells. Experimental Neurology. 1999, Vol. 158, pp. 265-278, see especially pages 273-277.	57-64
Y	THALMEIER, K. et al. Establishment of Two Permanent Bone Marrow Stromal Cell Lines with Long-Term Post Irradiation Feeder Capacity. Blood. 01 April 1994, Vol. 83, pp. 1799-1807, see entire document.	10-34 and 36-56 -----
X		35